Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

Final
Conditional Major, Construction / Operating
Permit: F-08-032 R1
Meggitt Aircraft Braking Systems Corporation
Danville, KY 40422
Date: March 16, 2009
Elahe Houshmand, Reviewer

SOURCE ID:	21-021-00053
AGENCY INTEREST:	71693
ACTIVITY:	APE20090001

SOURCE DESCRIPTION:

Meggitt Aircraft Braking System Corporation manufactures carbon composites aircraft brake disks. The facility is located in Boyle County that is classified as an attainment area for sulfur dioxide, carbon monoxide, ozone, nitrogen oxides and total suspended particulates pursuant to Regulation 401 KAR 51:010.

MINOR PERMIT REVISION - F-08-032 R1:

Meggitt Aircraft Braking System is adding five (5) carbon machining equipments to the facility, (IM-7 & FM-8 through FM-11). The source is not requesting any change in the source-wide emission limitations. Based on the submitted application received on March10, 2009, Division has determined that this addition can be covered per 401 KAR 52:030 Section 14, Minor Permit Revisions.

INITIAL PERMIT - F-08-032:

COMMENTS:

On August 8, 2008, the source applied to the Division for the addition of two paint spray booths, emission units FC001S and CC001S and three electric dry ovens to their existing facility. A review by the Division has determined that the facility has calculated its paint emissions by using bottlenecks and DAQ believes any of these bottlenecks can be relaxed or changed and potentially the source can exceed the major source thresholds for VOC and HAP(s).

To avoid a major source status, on October 16, 2008, the source submitted a letter stating that Meggitt Aircraft is requesting voluntary permit limits of less than 90.0 tons per year of volatile organic compounds (VOC), 9.0 tons per year of individual hazardous air pollutant (HAP) and 22.5 tons per year of combined HAPs. As a result, the state origin permit # S-05-126 R4, is rescinded and replaced by the conditional major source permit # F-08-032.

Background Information:
With the submittal of the original State Origin permit application, the Meggitt Aircraft Braking System Corporation, at that time known as Aircraft Braking Systems (ABSKY) Corporation, requested that certain information relative to its processes be kept confidential (confidentiality determination letter was issued on March 30, 2007, along with the issuance of the state origin permit, S-05-126 R1).

Nucarb is the product that the facility manufactures. Parts of the processes used to make Nucarb are protected by a federal patent, while other are considered company confidential information. The company heat treats carbon disk to modify the molecular structure of the carbon giving it the desired coefficient of friction that is best suited for its use and durability. The temperatures and times of the processes are essential to the uniqueness of the product and therefore have been included in the confidential information.

PAINT BOOTHS PROCESS DESCRIPTION:
Emission unit FC001S utilizes one air type spray gun that is used to spray anti-oxidant primer on carbon brake disks. The coating is applied only to non-wear or non friction surfaces. These surfaces consist of the outer edge (outer diameter or O.D.) and the inner edge (inner diameter or I.D.). The process also utilizes an electrically heated oven to dry the coating applied in the spray booth.

Emission unit CC001S utilizes one air type spray gun that is used to spray anti-oxidant silicone resin based topcoat on carbon brake disks. The coating is applied only to non-wear or non friction surfaces. These surfaces consist of the outer edge (outer diameter or O.D.) and the inner edge (inner diameter or I.D.). The process also utilizes two electrically heated ovens to dry the coating applied in the spray booth.

TYPE OF CONTROL AND EFFICIENCY:
Emission unit CC001S and FC001S each utilize a fabric filter that is 95% efficient in capturing PM/PM10. The transfer efficiency for this process is estimated at 50%.

EMISSION FACTORS:
Material balance
Engineering calculations
AP-42
Stack test conducted, November 28, 2007, for Benzene and VOC concentration from CVTI1 unit.

APPLICABLE REGULATIONS:
401 KAR 59:010, New process operations, is applicable to each affected facility or source, associated with process operations, which are not subject to another emission standard with respect to particulate matter emissions and commenced after July 2, 1975.
401 KAR 63:020-Potentially hazardous matter or toxic substances applies to all toxic air emissions.

Conditional Major limits for VOC and HAP(s) will preclude applicability of:
1. 401 KAR 52:020, *Title V Permits,*
2. 401 KAR 59:225, New miscellaneous parts and products surface coating operations; and
3. 40 CFR 63, Subpart MMMM, Miscellaneous metal parts and products surface coating MACT.

EMISSION AND OPERATING CAPS DESCRIPTION:

Meggitt Aircraft Braking System Corporation has requested voluntary permit limits of less than 90.0 tons per year of volatile organic compounds (VOC), 9.0 tons per year of individual hazardous air pollutants (HAPs) and 22.5 tons per year of combined HAPs.

TOXIC ANALYSIS:

Air Toxics:

The Division for Air Quality (Division) has performed air dispersion model screening of potentially hazardous substances that may be emitted by the facility based upon the permit limited process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

The following is a summary of the potentially hazardous substances upon which screening was performed, the modeled worst case impacts, and the level of concern (LOC) that would have triggered additional review and/or more detailed modeling. Since only worst case screening modeling was performed, these results do not, nor are they intended to, portray actual risk.

Affected Facilities	Pollutant	CAS #	Level of Concern (µg/m3)	Modeled Impact (ug/m3)
Carbon Vapor Infiltration Furnace afterburners (CVITI1,2,3, & 4)	Benzene	71-43-2	0.130	0.011
	Ethyl Benzene	100-41-4	100	0.002
	Styrene	100-42-5	100	0.005
	Toluene	108-88-3	500	0.001
Paint Booths FC001S & CC001S	Benzene**	71-43-2	0.130	0.036
	Xylene*	1330-20-7	10	4.52
	Toluene*	108-88-3	500	4.52
	Benzene Total	71-43-2	0.130	0.047

*- Based on limited source-wide emissions of 9.0 tons per year or 2.055 lbs/hr.

**- Based on limited emissions rates. TOPCOAT – CS 1800 D is composed of Xylene 19%, Toluene 11% & Benzene 0.16%, with maximum Xylene emission limit of 8.48[9.0 - 0.521 CVIT1, 2, 3 & 4 emissions] TPY, Benzene emissions from the paint booths would be limited to (0.16%/19%) x 8.48 = 0.0714 tons per year or 0.0163 lb/hr.

PERIODIC MONITORING:

The permittee shall maintain monthly records of the usage of any VOC/HAP containing material. VOC/HAP emissions shall be calculated and recorded on a *monthly* basis. These records shall be summarized in tons per month VOC/HAP emissions; subsequently, tons of VOC/HAP emissions per rolling 12-month period shall be recorded. In addition, these records shall demonstrate compliance with VOC/HAP emission limitations listed herein for the conditional major limitations. For more details regarding all monitoring requirements, see the permit.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.